EML

Environmental Measurements Laboratory

"A Federal Resource"

OVERVIEW OF EML

STATUS ▲ CORE CAPABILITIES ▲ ACTIVITIES

Who We Are

EML is a federal technical resource with a distinguished 50-year reputation in radiation and radioactivity metrology. It is government-owned, government-operated, programmatically under the Office of Environmental Management in the U. S. Department of Energy. The Laboratory is administered by the Chicago Operations Office.

What We Do

EML provides technical support, program management, and data quality assurance for measure- ments of radiation and radioactivity relating to environmental restoration, global nuclear non proliferation, and other priority issues for DOE, as well as for other government, national, and international organizations.

Our Value

Collectively, the experience of the Laboratory forms a critical asset to the Department for performing impartial assessments and critical reviews, providing technical guidance and training, and developing and deploying key technological advancements.

Core Capabilities:

- Environmental Sampling
- Radiochemistry
- Radiological Surveys
- Dose Reconstruction
- Risk Assessment
- Gamma-Ray Spectrometry
- Airborne Radioactivity Assessment
- Thermoluminescence Dosimetry
- Neutron Spectrometry
- Program Management
- Aerosol Measurements
- Physical Modeling
- Database Management
- Atomic Spectroscopy
- Electronics Design
- Instrument Fabrication

How We Serve our Customers:

Laboratory scientists, engineers, technicians, and support staff offer a team-oriented approach that brings a unique federal perspective and capability in meeting national needs. The professional staff is diversified with individuals holding degrees, many advanced, in such fields as:

atmospheric chemistry
biology
chemistry
computer science
ecology
economics
engineering
energy science
environmental sciences
geology
mathematics
meteorology
oceanography
physics
public administration
public health
statistics

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Activities:

- ***Serves*** the DOE as the leading nationally and internationally recognized low-level environmental radiation and radioactivity measurements laboratory.
- ***Manages*** a worldwide network for monitoring environmental radioactivity.
- ***Provides*** and implements an ongoing quality assessment program (QAP) for environmental measurements performed by all DOE contractors.
- ***Pursues*** applications of *in situ* gamma-ray spectrometry for radiological surveys (for site remediation, fallout assessment, and nuclear facility measurements).
- ***Maintains*** and updates a comprehensive database on DOE's human subjects research.
- ***Establishes*** methods for the analysis of environmental samples with a focus on radionuclides. Publishes these methods in its Procedures Manual (HASL-300, 28th Edition), first published in 1957.
- ***Contributes*** to the development of U. S. policy on the analyses of environmental radioactivity for CTBT and nonproliferation monitoring.
- ***Develops*** innovative techniques and instruments for radiation detection and evaluation that are applied to critical issues such as:
  - assessing the radiological exposure of passengers and crew to cosmic radiation in high altitude commercial aircraft
  - re-evaluating the exposures of the Japanese bomb survivors
  - establishing a radon database to assist in global transport and atmospheric modeling
  - evaluating the exposure of the population to uranium bearing atmospheric aerosols for compliance purposes
  - determining the risk from exposure to radon
  - developing a supersensitive radon instrument (Radgrabber) for deployment on aircrafts to track air-mass trajectories in real time
  - developing a portable battery operated radon/thoron instrument (Radometer) to quickly, 10-15 min, check levels in homes/ buildings.
- ***Performs*** radiological characterization studies at nuclear reprocessing and weapons research sites in the U.S. and the Former Soviet Union.
- ***Develops*** decommissioning survey methods for the NRC, and the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM).
- ***Represents*** the DOE in the planning and development of the Multi-Agency Radiation Laboratory Protocols Manual (MARLAP).
- ***Provides*** radon progeny standardization to the government and the private sector.

FY98 EML Budget: $7.8

- $5.0M EM Program Direction
- $2.8M EM, ER, NN, EH, AF, NRC, NASA

FY98 EML Personnel: 62 FTEs

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